DESCRIPTION OF THE MALE OF *ANAGRUS FLAVIAPEX* (HYMENOPTERA: MYMARIDAE), WITH NEW DISTRIBUTION AND HOST RECORDS[1]

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ABSTRACT: The male of *Anagrus flaviapex*, previously known from the female sex only in China, is described and illustrated based on Indian specimens. This mymarid egg parasitoid is an economically important species in India, where its host associations include the leafhoppers *Empoasca devastans* and *Typhlocyba sudra*.

The mymarid wasp *Anagrus empoascae* Dozier, originally described from Haiti (Dozier 1932), was first reported from India as an egg parasitoid of the cotton jassid, *Empoasca devastans* Distant, by Subba Rao (1966). One year earlier, Subba Rao et al. (1965) referred to this species as *Anagrus* sp. Singh and Baldev Parshad (1967) discovered that *Typhlocyba sudra* Distant, also found in India, is an alternate leafhopper host of this parasitoid. Because *E. devastans* is an economically important pest of several agricultural crops throughout India (Subba Rao et al. 1968), correct determination of its major natural enemy is desirable. It is clear from Subba Rao (1966) that the initial identification of this species as *A. empoascae* was not based on a comparison of Indian specimens with the type series of the Neotropical *A. empoascae*; therefore, confirmation of such an odd record was necessary.

In the collection of the Essig Museum, University of California, Berkeley [EMEC], I found seven female and 13 male specimens of *Anagrus* poorly mounted on three slides (on one of the slides together with a female *Arescon enocki* (Subba Rao and Kaur) and a male *Stethynium triclavatum* Enock) and labeled: "ex eggs of *Empoasca devastans*, New Delhi, India, Aug. 10, 1964, B.R. Subba Rao". I determined that these specimens all belong to *Anagrus flaviapex* Chiappini and Lin, a species in the *atomus* species-group of *Anagrus* as defined by Chiappini and Lin (1998). *Anagrus flaviapex* was described from three female specimens collected in Fujian Province of China, the holotype [reared from the egg of a rice planthopper, probably *Sogatella furcifera* (Horváth)] and two paratypes [yellow pan trap] (Chiappini and Lin 1998). *Anagrus empoascae*, a member of the *incarnatus* species-group, occurs in the Neotropical region and is also found in Hawaii (Triapitsyn 1997). Although I have not had a chance to examine any additional material of *Anagrus* reared from eggs of either *E. devastans* or *T. sudra* (my request for a loan of specimens from the Indian Agricultural Research Institute at New Delhi was ignored), it is very probable that all the above-mentioned records of *A. empoascae*

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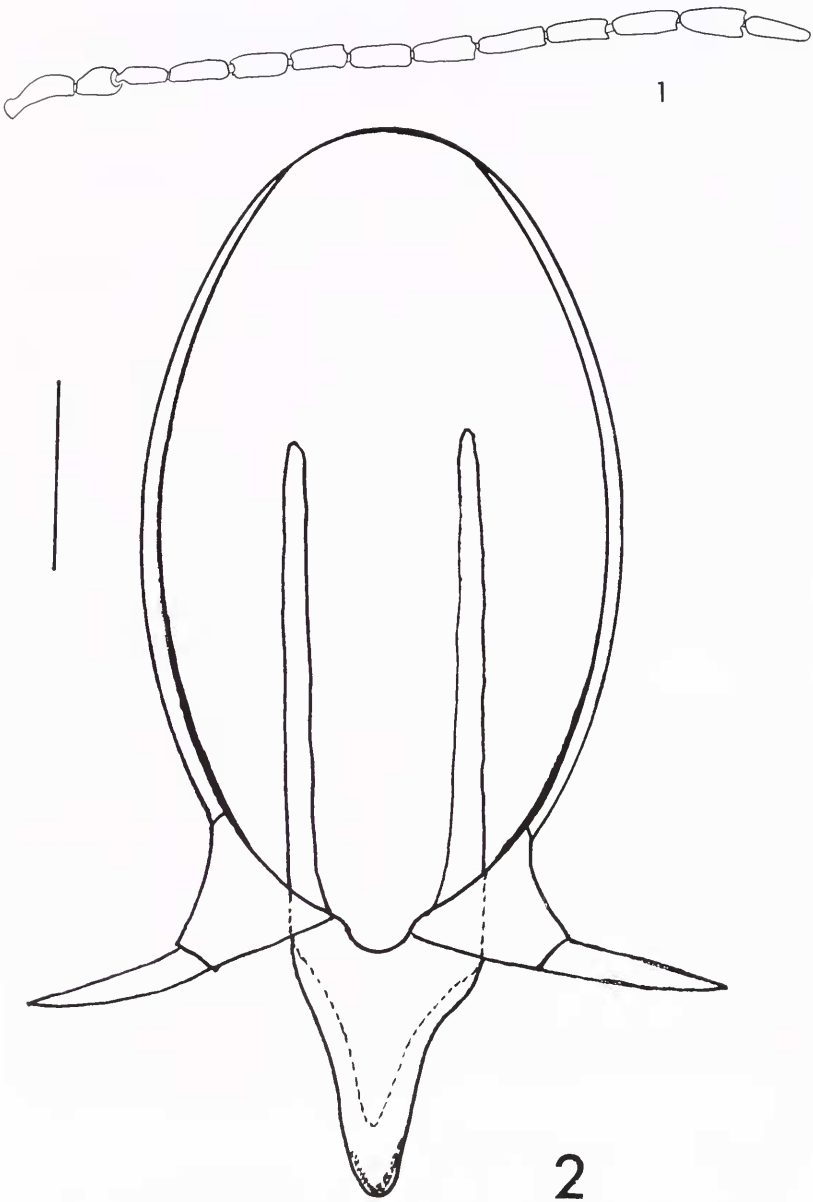

Figures 1-2. *Anagrus flaviapex*, male. (1) Antenna [scale line = 0.1 mm]; (2) Genitalia, dorsal view [scale line = 0.01 mm].

from India are erroneous due to misidentifications.

A short description of the male of *A. flaviapex* follows. The terminology and choice of measured anatomical features follows that found in Chiappini and Lin (1998). All measurements (length/width) are given in microns (μm) as an average, with the range following in parentheses. Abbreviation used: F = flagellar segment of the antenna.

Anagrus empoascae Dozier; Subba Rao, 1966: 189 (misidentified).
Anagrus flaviapex Chiappini and Lin, 1998: 562-564.

Male (n = 7). Similar to female, as described by Chiappini and Lin (1998), except for the sexually dimorphic characters normal for the genus (antenna as in fig. 1) and the following: general body color brown except head, anterior mesoscutum and metasomal terga all darker; two apical segments of metasoma more or less concolorous with remainder of metasoma, not conspicuously yellow as in female. Male forewing (length/width ratio 7.2-8.1:1) wider than female's (8.6-9.0:1, n = 7) and often without a well-differentiated hairless area along posterior margin. Genital capsule compact, aedeagus relatively short for the species-group, digiti with apical segment long and straight (Fig. 2). Measurements (n = 7). Body: 501 (432-585). Antenna: Scape: 60 (51-71); Pedicel: 37 (35-40); F1: 36 (29-42); F2: 44 (33-51); F3: 45 (34-52); F4: 46 (37-55); F5: 48 (39-55); F6: 49 (40-55); F7: 49 (40-58); F8: 50 (42-55); F9: 50 (44-55); F10: 51 (47-55); F11: 50 (44-60). Forewing: 508 (441-621)/66 (58-77). Genitalia: 66 (54-86).

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